Prehospital Pediatric Care

Respiratory Emergencies

Pretest

1. The process by which molecules of oxygen are carried via the blood stream to body tissues for use in metabolism is called?
   a. inhalation
   b. ventilation
   c. oxygenation
   d. exhalation

2. Which of the following is necessary to ensure oxygenation and acid/base balance?
   a. adequate rate and depth of inhalation
   b. adequate supplies of available oxygen
   c. appropriate rate and depth of exhalation
   d. depth and rate of inhalation and exhalation

3. You are called to the scene of a fight where a 7 year old has been hit in the chest with a bat. He is unconscious and has the following vital signs. BP 134/86 P 88 and irregular RR 6. On assessment he has one pupil which is dilated and a bruise at nipple line on the anterior chest. What should you do first to care for this pt.?
   a. insert an airway and apply oxygen per face mask at 100%
   b. insert an airway and begin assisted ventilation with high flow 02
   c. insert an airway, apply oxygen at 6 liters and attempt to find a family member to give you a health history
   d. apply oxygen, attempt to start an IV, and transport as soon as the IV is in place; apply cardiac monitor if available

4. Which of the following would NOT contribute to the obstruction of the airway by the tongue?
   a. dehydration
   b. fatigue
   c. unconsciousness
   d. infection

5. Which of the following statements is CORRECT regarding pediatric anatomy?
   a. the position of the larynx will promote airway obstruction if the head is hyperextended
   b. the construction of the trachea enhances intubation but promotes extubation
   c. the smallest diameter of the trachea is the glottic opening
   d. the larynx is very posterior and promotes foreign body obstructions

6. Which of the following statements is NOT correct regarding pediatric respiration?
   a. respiration is dependent on the work of the diaphragm
   b. during normal breathing, the abdomen rises and falls opposite chest movement
   c. prolonged tachypnea or dyspnea can cause respiratory failure
   d. the chest wall is thin, weak and unstable

7. Foreign bodies and edema more easily obstruct the pediatric airway because of which of the following?
   a. the position of the larynx
   b. the position of the trachea
   c. the small diameter of the airway tubes
   d. the soft, collapsible nature of the components of the airway

8. Which of the following history questions would NOT be helpful in determining the etiology of a respiratory problem?
   a. the presence and onset of fever
   b. changes in the child's willingness to talk or swallow
   c. alterations in the child's awareness of parents or siblings
   e. changes in the child's voice

9. Which of the following signs observed during the primary survey is indicative of partial obstruction of the upper airway?
   a. stridor
   b. nasal flaring
   f. sniff position
   d. cyanosis

Match the signs (a-e) to the appropriate description (10- 13).

10. sign of deoxygenated hemoglobin _____
11. reflex to promote airflow _____
12. reflects increased work of breathing _____
13. sign of respiratory arrest _____

   a. nasal flaring
   b. grunting
   c. cyanosis
   d. retractions
   e. bradypnea

14. An abnormal lung sound heard during exhalation which is caused by obstruction of bronchial tubes by swelling or spasm is called?
    a. stridor
    b. wheezing
    c. crackles
    d. snoring

Match the condition (a-c) to the appropriate etiology or symptoms (1-7). A letter may be used more than once.

15. caused by a bacteria _____
16. acute onset without fever _____
17. coughing, choking, stridor _____
18. caused by a virus _____
19. slow onset with stridor _____
20. acute onset with fever _____
21. presence of wheezing _____

    a. foreign body
    b. croup
    c. epiglottitis

22. Which of the following conditions would have the symptoms of drooling and sniff position?
    a. foreign body obstruction
    b. croup
    c. epiglottitis
    d. both croup and epiglottitis

23. Which of the following conditions would have the symptom of stridor without fever?
    a. croup
    b. epiglottitis
    c. both croup and epiglottitis
    d. foreign body aspiration

24. Your patient is a 3-year-old child who was playing and suddenly experienced coughing, choking and apnea. On arrival you see abdominal heaving but no air is coming from the mouth or nose. The child is extremely blue-gray and in obvious distress. What should you do?
    a. attempt bag/valve/mask ventilation while obtaining a history
    b. quickly perform the Heimlich maneuver
    c. perform alternating back blows and chest compressions
    d. survey the scene and question the caregiver regarding fever or other illnesses

25. Your patient is a 6 year old who appears to be struggling to breathe. She is cyanotic, lethargic and is lying with her mouth open and tongue extended. Her ventilatory efforts are minimal at a rate of about 40 and her mother states she became ill earlier in the day with what she thought was a strep throat. She has an appointment for the child to be seen at the clinic in the morning. What action should you initiate?
    a. offer the child some water and see if she can swallow
    b. visualize the posterior pharynx using a sterile tongue blade to look for the white spots characteristic of strep
    c. do nothing except transport the child to the hospital
    d. initiate bag/valve/mask assisted ventilation with 100% oxygen and notify the hospital of the situation and your arrival time

26. Your patient is a 2-year-old child who has stridor, a barking seal like cough and tachypnea of 46. The mother states the child has been fussy the last couple of days but she also shows you a toy car with a missing wheel. She says that she thinks the child looks sicker than he did about an hour prior. What should you do?
    a. offer oxygen by blow-by and transport immediately
    b. perform the Heimlich in case the boy has aspirated the wheel
    c. attempt to visualize the posterior pharynx in case you can see an object and remove it
    d. attempt to assist ventilation as necessary and obtain a more detailed history

27. Which of the following statements is correct regarding the etiology of Asthma?
    a. it results from an infection of the bronchioles and alveoli
    b. it occurs as a result of lower airway hyper-reaction to a stimuli
    c. it occurs due to hypersensitivity of alveoli from infection
    d. it is a hereditary condition resulting from multiple allergies

28. Which of the following is NOT a typical pathological problem found in Asthma?
    a. edema of the mucous membranes lining the air passages
    b. spasm and constriction of the lower airway passages
    c. swelling of the subglottic structures and tissues
    d. excess mucous secretions

29. Which of the following is NOT a typical pattern of symptoms of an Asthmatic attack?
    a. stridor, grunting and fever
    b. tachypnea, tachycardia, expiratory wheezing
    c. intercostal retractions and coughing
    d. pale color, apprehension and tripod position

30. Which of the rollowing would alert EMS providers that an Asthmatic attack is progressing to respiratory failure?
    a. auscultation of both inspiratory and expiratory wheezing
    b. vomiting and cyanosis
    c. use of accessory muscles to breathe
    d. diminished breath sounds and wheezing with prolonged expiration

31. A 7-year-old child has been fighting an asthmatic attack for about 2 days. He was seen in the emergency room yesterday and improved after administration of 0.1 mg of epinephrine. On arrival you find him confused, agitated and cyanotic. You can not auscultate any breath sounds: vital signs are; BP 108/ 78, P 158 RR 12. Select the appropriate care.

    a. give 02 per mask at 12 liters; start an IV of LR and run at 20 cc/min; obtain a temperature and transport
    b. initiate ventilatory support per bag/ valve/mask and immediately transport
    c. administer 02 per mask, attempt to have him drink warm water and have him use his inhaler once more
    d. begin CPR and contact the hospital

32. You are called to the scene where a 1-year-old child is showing signs of tachycardia, tachypnea, wheezing and a dry cough. The mother states the child has had a mild fever and a runny nose for 3 days but became acutely ill this pm. What further information is most important for you to determine at this time?
    a. what the child's fever is at this time
    b. if the child has any allergies
    c. if the child is a known asthmatic
    d. when the child last ate

33. In addition to the above signs, you also note nasal flaring with both intercostal and supraclavicular retractions. What is the significance of these signs?
    a. there is diminished airflow and increased work of breathing to overcome the hypoxemia
    b. they are normal compensatory actions for asthma or infection
    c. all children with respiratory infections will have these signs
    d. they reflect the child's ability to fight the problem and are positive indications

34. Which of the following changes in the vital signs of this child should cause you the most concern?
    a. the coughing triggers vomiting
    b. the tachypnea changes to bradypnea
    c. the child becomes lethargic
    d. the tachycardia changes to bradycardia

35. Which of the following statements is NOT correct regarding BPD?
    a. it is caused by the therapies used to treat prematurity
    b. it is a viral syndrome
    c. BPD infants often have other congenital anomalies
    d. BPD infants are more fragile and decompensate faster than non BPD infants

36. The most essential skill or knowledge that EMS providers should posses in order to properly care for conditions involving the respiratory tract is?
    a. ability to auscultate and recognize abnormal breath sounds
    b. ability to recognize the signs/significance of nasal flaring, positioning, retractions
    c. ability to recognize progression of symptoms
    d. knowledge regarding the etiology and therapies for individual airway problems

37. A 5 year old child has been found in the garage unconscious. There are no witnesses as to the cause, no signs of trauma but there are many cans and bottles of different thinners and cleaners. However, at this time no clues or signs point to any ingestion. The boy is mottled and cyanotic, has diffuse crackles over all lung fields, has no radial pulse and a faint carotid pulse. Vital signs: BP 60/40 P 168 and irregular RR 66. Which of the following is correct?
    a. insert airway; apply 02 mask at 12 liters; start IV of LR (if allowed by level or protocol); apply but not inflate MAST and transport
    b. initiate transport; while en route apply 02 per non re-breather mask, start IV with LR (if allowed by level or protocol)
    c. begin bag/valve/mask assisted ventilation with 100% oxygen at 40/min or intubate according to provider level; initiate transport; establish IV line enroute
    d. begin bag/valve/mask assisted ventilation with 100% 02 or intubate; apply and inflate leg compartment of MAST then start peripheral IV of LR; look again for possible etiology of problem and obtain history of other medical problems; contact base station for further help

Match the condition (a or b) to the correct sign (2-7), A letter can be used more than once

38. apathy; lethargy _____
39. retractions _____
40. bradypnea _____
41. decreased capillary refill _____
42. aggitation _____
43. tachycardia _____

    a. respiratory distress
    b. respiratory failure

44. A 2-year-old has been hit by a car. She is unconscious; bleeding profusely from both ears; has obviously fractured lower legs. Vital signs are: BP 50 by palpation P 46 RR 10 and irregular. Which of the following is the number one priority?
    a. IV of LA
    b. transport
    c. assisted ventilation
    d. cardiac compressions

45. Which of the following correctly describes the effect of major levels of acidosis on the CNS?
    a. it blocks CNS sensors causing seizures
    b. it depresses causing unconsciousness
    c. it excites CNS sensors causing anxiety and agitation
    d. it has little effect on CNS sensors

46. Which of the following correctly describes the effect of major levels of acidosis on the heart and cardiovascular system?
    a. it blocks cardiac impulses causing fibrillation
    b. it excites myocardial cells causing tachycardia and ectopy
    c. it depresses cardiac cells causing bradycardia and vasodilation
    d. it has little effect on the heart and cardiovascular system

47. A complication of prolonged blow-by administration of oxygen in infants is:
    a. iatrogenic hypoxia
    b. drying of sclera and cornea
    c. nausea/vomiting
    d. hypothermia

48. When suctioning children, what does the provider need to ensure regarding the type of catheter?
    a. that it has a soft tip
    b. that it is made of pliable plastic
    c. that it has a dual suction port
    d. that it is sized to match the small finger of the child

49. When either BVM ventilation or endotracheal intubation is utilized in a child, what other therapy must occur?
    a. an IV must be started
    b. application (not inflation) of MAST
    c. an NG tube should be inserted
    d. a BP should be ascertained

50. Accidental extubation most commonly occurs in which of the following situations?
    a. during CPR

b. during loading or unloading from ambulances
c. when turning a child
d. when placing leads for a cardiac monitor

51. An untoward effect of excess pressure on the eyes/eyebrows of a child, especially from the mask during BVM resuscitation is?
a. rupture of the posterior chamber of the eye
b. elevation in intracranial pressure
c. corneal abrasion
d. bradycardia

52. Your patient is a toddler who fell into the bathtub. The baby was only in the water about 1-2 minutes before being found by the mother. The child was apneic on your arrival but had a heart rate of 104 and reactive pupils. After about 3-4 minutes of aggressive airway resuscitation you now observe: no change in LOC, pupils are non reactive and the heart rate is 44. What actions should you consider?
a. begin CPR and rapid transport
b. start an IV line and anticipate needing to defibrillate
c. examine your equipment and reevaluate the child's airway
d. talk to the mother and carefully attempt to determine if her history is correct/look for any signs of trauma (abuse)